

US EPA ARCHIVE DOCUMENT

TABLE C-4-1

ACUTE HAZARD QUOTIENT

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Description

This equation calculates the acute hazard quotient AHQ for short term inhalation exposures to COPCs. Uncertainties associated with this equation include the following:

- (1) Uncertainties may be associated with development components of COPC-specific acute inhalation exposure criteria (AIECs), including exposure group protected, exposure duration, and toxicity endpoint. Uncertainties are specific to each COPC's AIEC, and may under or overestimate the potential for causing adverse health effects.
- (2) Most of the uncertainties associated with the variables in the equation in Table B-6-1 (used to calculate C_{acute}), specifically those associated with the variables Q , Chv , and Chp , are site-specific.

Equation

$$AHQ_{inh(i)} = \frac{C_{acute} \cdot 0.001}{AIEC}$$

Variable	Description	Units	Value
$AHQ_{inh(i)}$	Acute hazard quotient for inhalation of COPCs	unitless	
C_{acute}	Acute air concentration	$\mu\text{g}/\text{m}^3$	Varies This variable is COPC- and site-specific, and is calculated by using the equation in Table B-6-1.
$AIEC$	COPC acute inhalation exposure criteria	mg/m^3	Varies This variable is COPC-specific (see table in Appendix A-4) and determined following a hierarchal approach as discussed in Chapter 7 of the HHRAP. The following uncertainty is associated with this variable: Uncertainties may be associated with development components of COPC-specific acute inhalation exposure criteria (AIECs), including exposure group protected, exposure duration, and toxicity endpoint. Uncertainties are specific to each COPC's AIEC, and may under or overestimate the potential for causing adverse health effects.
0.001	Conversion factor	$\text{mg}/\mu\text{g}$	